

**IN THE CLAIMS:**

All claims are listed below. For the Examiner's convenience, Appendix A lists only the pending claims and in order of their dependency.

1. (currently amended) A method for detecting ~~at least one emergent concept~~ a group of related sites among a plurality of sites comprising the steps of:

creating at least one adjacency matrix,  $A$ , said adjacency matrix having a plurality of entries,  $A_{ij}$ , wherein  $i$  and  $j$  are among said plurality of sites;  $A_{ij} = r$  if said sites  $i, j$  are connected;  $A_{ij} = 0$  otherwise; and  $r$  is a positive number that represents a strength of connection between sites;

computing a transpose matrix,  $A^T$ , of said adjacency matrix  $A$ ; and

computing ~~nth~~ one or more non-principal eigenvectors,  $X^{(n)}$  and  $Y^{(n)}$ , of the matrix products of said transpose matrix and said adjacency matrix,  $A^T A$  and  $A A^T$ , respectively, ~~for the elements of these eigenvectors~~ determining an authority value and a hub value of each of said plurality of sites, ~~wherein n is a natural number,~~

~~wherein the emergent concept is detected as a collection of related sites exceeding a minimum connectivity threshold each non-principal eigenvector identifies a group of related sites.~~

2-13. (canceled)

14. (currently amended) A method for detecting ~~and tracking~~ at least one ~~an~~ emergent concept group of related sites among a plurality of sites comprising the steps of:

repeating for a plurality of different times the steps of

creating at least one adjacency matrix,  $A$ , said adjacency matrix having a plurality of entries,  $A_{ij}$ , wherein  $i$  and  $j$  are among said plurality of sites;  $A_{ij} = r$  if said sites  $i, j$  are connected;  $A_{ij} = 0$  otherwise; and  $r$  is a positive number,

computing a transpose matrix,  $A^T$ , of said adjacency matrix  $A$ , and

computing ~~nth~~ one or more non-principal eigenvectors,  $X^{(n)}$  and  $Y^{(n)}$ , of the matrix products of said transpose matrix and said adjacency matrix,  $A^T A$  and  $A A^T$ , respectively, ~~for the elements of these eigenvectors~~ determining an authority value and a hub value of each site, ~~wherein n is a natural number greater than one, and wherein said nth eigenvectors X<sup>(n)</sup> and Y<sup>(n)</sup> are non-principal eigenvectors, wherein the emergent concept is detected as a collection of related sites exceeding a~~

minimum connectivity threshold each non-principal eigenvector identifying a group of related sites,  
and

detecting the emergent concept group of related sites as a collection group of related sites  
exceeding a minimum connectivity threshold, and with temporally increasing relatedness, wherein  
relatedness depends on the authority values and the hub values.

~~repeating the forgoing steps after passage of a time period for tracking said emergent concept~~  
~~and for detecting new emergent concepts.~~

15. (currently amended) The method of claim 1 wherein the sites are World Wide Web  
pages, and wherein sites i and j are connected by World Wide Web references.

16. (currently amended) The method of claim 14 further comprising allocating a lexical score  
to a collection group of sites in order to selectively construct the adjacency matrix.

17. (previously added) The method of claim 16 wherein the lexical score is calculated by  
means of latent semantic indexing.

18-21. (canceled)

22. (previously added) Computer executable software code stored on a computer readable  
medium that, when loaded into a computer, causes the computer to perform the method of claim 1.

23. (previously added) Computer executable software code stored on a computer readable  
medium that, when loaded into a computer, causes the computer to perform the method of claim 14.

24. (canceled)

25. (currently amended) A programmed computer system for detecting at least one emergent  
concept a group of related sites among a plurality of sites comprising:

~~at least one memory having at least one region storing computer executable program code,~~  
~~and~~

~~at least one processor for executing the program code stored in said memory, wherein the~~  
~~program code causes the processor to perform the method of claim 1.~~

26. (currently amended) A programmed computer system for detecting ~~and tracking at least one an emergent concept group of related sites~~ among a plurality of sites comprising:

at least one memory having at least one region storing computer executable program code, and

at least one processor for executing the program code stored in said memory, wherein the program code causes the processor to perform the method of claim 14.

27-28. (canceled)

29. (currently amended) The method of claim 1 wherein the sites are World Wide Web pages, and wherein sites *i* and *j* are connected by World Wide Web references.

30. (currently amended) The method of claim 15 further comprising a step of posting a report of said emergent concept group of related sites, wherein the report comprises World Wide Web references to the collection group of related sites.

32. (currently amended) The method of claim 31-40 wherein the time period plurality of times is calibrated to detect communities suspected of engaging in illegal collusive practices.

31. (canceled)

33. (currently amended) The method of claim 24-35 wherein the value of  $A_{ij}$  is adjusted to detect accelerations in the pattern of communications.

34. (new) The method of claim 1 wherein the sites are documents, and wherein sites *i* and *j* are connected by document references.

35. (new) The method of claim 1 wherein sites *i* and *j* are connected if a communication has occurred between the sites in a pre-selected time period.

36. (new) The method of claim 1 wherein sites *i* and *j* are connected if a communication has occurred between the sites with the value of  $A_{ij}$  being larger if the communication is more recent.

37. (new) The method of claim 1 wherein the sites comprise sites that are under surveillance.

38. (new) The method of claim 1 wherein one or more non-principal eigenvectors comprises all non-principal eigenvectors.

39. (new) The method of claim 1 further comprising detecting more closely related sites in dependence on the authority values and the hub values.

40. (new) The method of claim 14 wherein the sites comprise sites that are under surveillance.

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